What is claimed is:

1	1.	A method for quantifying the weight percent methane in real time in a wellbore
2		environment, comprising:
3		obtaining a fluid downhole;
4		measuring a first optical density for the fluid at a first wavelength region
5		associated with a methane peak;
6		measuring a second optical density for the fluid at a second wavelength region
7		associated with the methane peak; and
8		determining weight percent methane for the fluid sample from the first and second
9		measured optical densities.
1	2.	The method of claim 1, wherein the first wavelength region has a center
2		wavelength of 1670 nanometers; and
3		the second wavelength has a center wavelength of 1682 nanometers.
1	3.	The method of claim 1, further comprising:
2		correlating weight percent methane with optical absorbance at the first and second
3		wavelengths.
1	4.	The method of claim 3, further comprising:
2		correlating pressure.

5. 1 The method of claim 3, further comprising: 2 correlating temperature. The method of claim 1 further comprising: 6. 1 2 determining a gas oil ratio for the sample based on the weight percent methane. 1 7. The method of claim 1, further comprising: 2 monitoring sample cleanup based on a change in weight percent methane. The method of claim 3, further comprising: 1 8. 2 correlating based on synthetic mixtures of methane and dead crude oils. The method of claim 1, further comprising: 1 9. 2 filtering an optical density measurement with a 11 nm full width half maximum 3 filter. 1 10. The method of claim 1, wherein the first wavelength region has a center 2 wavelength of 1670 nanometers and the second wavelength has a center 3 wavelength of 1682 nanometers; 4 correlating weight percent methane, pressure and temperature with optical

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absorbance at the first and second wavelength regions; and

determining a gas oil ratio based on the weight percent methane.

1 11. An apparatus for quantifying the weight percent methane in real time in a 2 wellbore environment, comprising: 3 a tool for obtaining a fluid downhole; 4 a spectrometer for measuring a first optical density for the fluid at a first 5 wavelength region associated with a methane peak and measuring a second optical density for the fluid at a second wavelength region associated with the 6 methane peak; and 7 a processor function for determining weight percent methane for the fluid sample 8 9 from the first and second measured optical densities. The apparatus of claim 11, wherein the first wavelength region has a center 1 12. 2 wavelength of 1670 nanometers; and the second wavelength has a center wavelength of 1682 nanometers. 3 1 13. The apparatus of claim 11, further comprising: 2 a processor function for correlating weight percent methane with optical 3 absorbance at the first and second wavelengths. The apparatus of claim 13, the processor function further comprising a function 1 14. for correlating pressure. 2 1 15. The method of claim 3, the processor function further comprising a function for

correlating temperature.

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1 16. The apparatus of claim 11 further comprising: 2 a processor function for determining a gas oil ratio for the sample based on the 3 weight percent methane. 17. The apparatus of claim 11, further comprising: 1 2 a processor function for monitoring sample cleanup based on a change in weight 3 percent methane. The apparatus of claim 13, the processor function further comprising a function 1 18. 2 for correlating based on synthetic mixtures of methane and dead crude oils. 19. The method of claim 11, further comprising: 1 2 a filter for filtering an optical density measurement with a 11 nm full width half 3 maximum filter. The apparatus of claim 11, wherein the first wavelength region has a center 20. 1 2 wavelength of 1670 nanometers and the second wavelength has a center

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wavelength of 1682 nanometers, the processor function further comprising a

function for correlating weight percent methane, pressure and temperature with

optical absorbance at the first and second wavelength regions and a function for

determining a gas oil ratio based on the weight percent methane.

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1 21. A computer readable medium containing executable instructions that when 2 executed by a computer perform a method for quantifying the weight percent 3 methane in real time in a wellbore environment, comprising: 4 obtaining a fluid downhole; measuring a first optical density for the fluid at a first wavelength region 5 6 associated with a methane peak; measuring a second optical density for the fluid at a second wavelength region 7 8 associated with the methane peak; and 9 determining weight percent methane for the fluid sample from the first and second 10 measured optical densities. 22. The medium of claim 21, wherein the first wavelength region has a center 1 2 wavelength of 1670 nanometers; and 3 the second wavelength has a center wavelength of 1682 nanometers. 1 23. The medium of claim 21, further comprising: 2 correlating weight percent methane with optical absorbance at the first and second 3 wavelengths. 24. The medium of claim 23, further comprising: 1 2 correlating pressure.

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The medium of claim 23, further comprising:

- 2 correlating temperature. 1 26. The medium of claim 21 further comprising: 2 determining a gas oil ratio for the sample based on the weight percent methane. 1 27. The medium of claim 21, further comprising: 2 monitoring sample cleanup based on a change in weight percent methane. 1 The medium of claim 23, further comprising: 28. 2 correlating based on synthetic mixtures of methane and dead crude oils. 29. The medium of claim 21, further comprising: 1 2 filtering an optical density measurement with a 11 nm full width half maximum 3 filter. 1 30. The medium of claim 21, wherein the first wavelength region has a center 2 wavelength of 1670 nanometers and the second wavelength has a center 3 wavelength of 1682 nanometers;
- correlating weight percent methane, pressure and temperature with optical absorbance at the first and second wavelength regions; and determining a gas oil ratio based on the weight percent methane.